Karin Ritter
Manager
API
Regulatory & Scientific Affairs
200 Massachusetts Ave NW
Washington, DC 20001
202-682-8472
ritterk@api.org

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GHG Inventory at: Environmental Protection Agency,
Climate Change Division (6207A),
1200 Pennsylvania Ave. NW,
GHGInventory@epa.gov

Re: API Comments on the Inventory Report of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017 (Draft Inventory Report Docket at EPA-HQ-OAR-2018-0853)

Dear EPA,

The American Petroleum Institute (API) appreciates the opportunity to review and provide comments on the Draft report on the U.S. Greenhouse Gas Emissions and Sinks: 1990-2017. API comments are focused on the methodology and emission estimates for Petroleum and Natural Gas Systems of the U.S. Greenhouse Gas Inventory (GHGI) report referenced above.

API represents over 625 oil and natural gas companies, leaders of a technology-driven industry that supplies most of America's energy, supports more than 9.8 million jobs and 8 percent of the U.S. economy, and, since 2000, has invested nearly $2 trillion in U.S. capital projects to advance all forms of energy, including alternatives. Most of our members will be directly impacted by the way emissions from their operations are depicted in the national GHGI.

Since 2002, API has provided comments on the draft Petroleum and Natural Gas Systems sections of the national inventory. API's focus is to make sure the GHGI emission estimates are based on the best and most current data available, reflect actual industry practices and activities, and are technically correct.

Throughout 2018, API has participated in EPA's stakeholders' process and expert review phases of the GHGI development process, providing comments and recommendations on the agency's proposed methodologies. The comments below consist of brief observations and recommendations on several segments of the draft Petroleum and Natural Gas Systems sections of the 2019 GHGI.

The letter also includes an attachment with preliminary comments on potential future revisions to the methodology of estimating emissions from offshore platforms.

1. **Gathering & Boosting (G&B) stations emissions**
In its October 2018 memo, EPA presented three scenarios for using GHGRP data to estimate G&B station emissions. EPA ultimately decided not to update its estimation methodology for G&B stations due to stakeholder feedback that supported maintaining the current GHGI methodology until new data becomes available.

EPA is seeking feedback on potentially applying a GHGRP-based methodology to estimate CO_2 emissions from G&B stations for inclusion in the final 2019 Inventory, while maintaining the current Inventory approach for CH_4.

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API Comments:
In its August 22, 2018 comment letter to EPA API supported EPA's proposed basin level scaling approach for G&B stations emissions. At the same time API recognized the lack of national data for the G&B segment, which would require further research and analysis prior to adopting an amended methodology.

Furthermore, API's December 10, 2018 letter to EPA conveyed its general support for using GHGRP data that is based on actual equipment counts, measurements, or engineering principles. As was pointed out in that letter, calendar year 2017 is only the second reporting year for G&B sources, and emissions estimates for some of these sources is lacking since they are based on generic emission factors.

API continues to request that EPA wait to have an additional year of GHGRP reported data, and new information that may be forthcoming from on-going studies, prior to amending its emission estimation methodology. Such an approach would ensure consistency for G&B stations emissions estimation methodology for both CO_2 and CH_4. Therefore, API is urging EPA to refrain from using a basin scaling based approach for estimating CO_2 emissions while relying on nationwide total dry gas delivery to market for CH_4, emission estimation.
nationwide total dry gas delivery to market for CH_4, emission estimation.

2. **HF Oil well completions and workovers**
EPA revised the HF oil well workovers methodology to use the same general approach as for HF oil well completions. EPA states that stakeholder feedback supported an approach of using GHGRP data to update activity and emissions factors on an annual basis from 2016 forward.

API Comments:
API acknowledges EPA's revised methodology which follows API's request (August 2018 memo) for establishing separate emission factors for oil well completions and oil well workovers. This is now enabling consistent reporting of emissions from these respective activities in the Exploration and Production segments of the inventory.

3. **Refinery emissions**
EPA indicates that there are minimal changes in recalculated CH_4 and CO_2 emissions for 1990 to 2015 for this segment, with some changes for 2016 recalculations, in accordance with GHGRP submission revisions.

EPA additionally states that one stakeholder noted a recent study that measured three refineries and found higher average emission than those presented in the Inventory. That stakeholder suggested that EPA evaluate the study and any additional information available on this source.

API Comments:
As initially recommended and supported by API, emissions from the petroleum refining sector are based on year-specific emissions data, which is obtained directly from EPA's GHGRP for all the years since the initiation of reporting in 2010. EPA's GHGRP estimation methodology is very detailed and it is based on site specific information and measurement data. Consequently, the GHGRP approach results in very robust estimates of GHG emissions from U.S. refineries.

Although API recognizes the need to review and evaluate new relevant data, API cautions against jumping to unwarranted conclusions based on measurements from a single study that presents measurements obtained during flyover transects of three refineries only. It is imperative to recognize that aircraft-based mass balance measurement techniques are difficult to conduct as they are highly dependent on weather conditions and may be impacted by adjacent sources. Moreover, the results obtained are based on sampling during short-term time flight windows that are not representative of yearly average emissions from refining operations at the facility.

4. Off-shore platforms

Among its planned improvements EPA noted that it is considering updates to the offshore platform emissions calculation methodology, per the discussed in the April 2018 memo titled, "Additional Revisions Considered for 2018 and Future GHGIs". EPA states that the current emission factors were based on data from the 2011 Bureau of Ocean Energy Management's (BOEM) dataset, while the 2014 BOEM data are already available. Also being considered is a different source for platform counts.

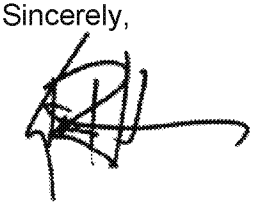
API Comments:
API supports utilizing the 2014 BOEM data to update the emission estimation methodology for offshore platforms in order to ensure the utilization of the most current representation of activities and emissions. As the methodology is being updated it ought to be noted that GHG emissions from deep-water GoM facilities have better emissions controls than most international oil and gas production operations. Since GHG emissions are a global concern it is advisable that the U.S. national inventory should strive to highlight the difference between emissions from GoM production as compared to oil and gas production in other offshore areas.

In the attachment to this letter API provides an initial set of specific comments regarding potential improvements to the offshore platforms' methodology in response to EPA's preliminary methodology improvements presented in its April 2018 memo.

API plans to continue to compile and analyze greenhouse gas (GHG) emissions data for petroleum and natural gas systems and is committed to working with EPA in the future on utilizing data provided through EPA's mandatory GHG reporting program (GHGRP) and other relevant information sources.

API welcomes EPA's willingness to work with industry to improve the data used for the national inventory. API encourages EPA to continue these collaborative discussions and is available to work with EPA to make best use of the information available under the GHGRP, or other appropriate sources of information/data, to improve the national emission inventory.

Sincerely,



Karin Ritter

cc: Melissa Weitz, weitz.melissa@epa.gov
Mark DeFigueiredo, DeFigueiredo.Mark@epa.gov
Adam Eisele, Eisele.Adam@epa.gov
Mausami Desai, desai.mausami@epa.gov

Attachment: Specific Comments regarding Offshore Platforms

API is providing below some initial specific comments on the approach presented by EPA on revising the estimates of GHG emissions from Offshore Platforms[1].

- **p. 19, Table 18** - EPA should reconsider the practice of categorizing emissions by the water depth of the facility. EPA's approach gives the erroneous impression that shelf production is environmentally preferable (from an air emissions standpoint). That is clearly not the case. Fewer, more dispersed deep-water facilities with fewer wells produce much more oil and gas. The 59 deep-water surface structures (about 3% of the GoM total) produce approximately 90% of the oil and 60% of the natural gas. Emissions per barrel of oil equivalent (BOE) are thus much lower for deep-water facilities.

- **p. 19 excerpt**: *As seen in Table 17, when gas platforms are defined as those producing more than 100 thousand cubic feet of gas per barrel of hydrocarbon liquid (mcf/bbl), there are no deep-water gas platforms in the GOADS database, resulting in no EF for this platform group. EPA assigned the deep-water oil platform EF to deep-water gas platforms as a surrogate.*

  Comment: This may be a moot point given the absence of deep-water *platforms* and the likelihood that deep-water production will continue to be predominantly oil. However, dry gas platforms tend to be less complex with fewer wells and less processing equipment. Assigning the oil platform EF to such gas platforms would significantly overstate emissions.

- **p. 20 excerpt**: *The activity data for the calculation of these emissions from 1990 through 2008 was provided by U.S. Mineral and Mining Service (MMS)*

  Comment: API assumes that EPA intended to note that MMS was the Minerals Management Service.

- **p. 21, Table 19**: While the discussion is about flaring and venting, this table only includes the flaring numbers. An important development over the past 10 years is the reduction in gas being vented. Even though oil-well gas production (for which there is a greater incentive to flare) now (since 2016) exceeds gas-well gas production, the volume of gas flared or vented has declined (see chart below). While total gas production has also declined, total flaring/venting volumes have remained relatively stable at around 1% of total gas production.

[1] U.S. EPA, "Additional Revisions Considered for 2018 and Future GHGIs", April 2018 Memo.

- Platform emissions are a function of complexity, power requirements, processing equipment, maintenance, reliability, and control systems. Although deep-water platforms tend to be more complex, that is not always the case and emissions are not a direct function of water depth. A different classification scheme that considers complexity and processing capacity should be considered. One option would be to establish emission factors by facility category (e.g. FPSOs, TLPs, production semis, major fixed platforms, minor satellite platforms, guyed towers, and spars).

- The data source for vented and flared volumes is EIA's compilations of natural gas gross gas withdrawal for the time series 1997-2017.[2]

- While EIA data (the only flaring data available online) do not distinguish between flaring and venting volumes, the trend favors flaring (vs. venting) because most gas is now produced at modern deep-water facilities. A 2017 BSEE report (Argonne National Laboratory, 2017, Tables 1 and 2)[3] confirms that oil-well gas is primarily flared (in those instances when not captured and exported to market) and that nearly all the gas released from floating deep-water structures is flared. Given the much higher GHG effect of methane (vs. CO_2), this is a very important distinction and highly favorable trend.

[2] Natural Gas Gross Withdrawals and Production, Federal offshore GoM, vented and flared; https://www.eia.gov/dnav/ng/NG_PROD_SUM_DC_R3FM_MMCF_A.htm

[3] BSEE, Venting and Flaring Research Study Report, January 2017; https://www.bsee.gov/sites/bsee.gov/files/5007aa.pdf